See: SAT-AMD-20051118-00249

GRANTED
International Bureau

File # SAT-MOD-20050930-00195
with attached conditions
Call Sign S2607 Grant Date 12/21/2005
(or other identifier)
Term Dates
From See Conditions To: See Conditions
Approved by OMB
3060-0678
Approved: Chief Satellite
Robert G. Nelson Engineering Branch

Date & Time Filed: Sep 30 2005 7:44:55:110PM
File Number: SAT-MOD-20050930-00195

FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD – MAIN FORM FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:
Application for Modification to Select TT&C Frequencies for Extended Ku-band Satellite at 109 W.L.

1-8. Legal Name of Applicant

Name:	EchoStar Satellite Operating Corporation	**Phone Number:**	303-723-1000
DBA Name:		**Fax Number:**	303-723-1699
Street:	9601 South Meridian Boulevard	**E-Mail:**	
City:	Englewood	**State:**	CO
Country:	USA	**Zipcode:**	80112 –
Attention:	David K Moskowitz		

Attachment
Conditions of Authorization
December 21, 2005

1. Echostar Satellite Operating Corporation's (Echostar's) applications File No. SAT-MOD-20050930-00195 and SAT-AMD-20051118-00249 to modify its current authorization File No. SAT-LOA-20031211-00350, Call Sign S2607, IS GRANTED. Accordingly Echostar is authorized to launch and operate its EchoStar-109W satellite into 109.0° W.L., in the 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), and 13.75-14.0 GHz (Earth-to-space) frequency bands and to operate its TT&C at 13.752 GHz (Earth-to-space), 13.998 GHz (Earth-to-space), 11.452 GHz (space-to-Earth), and 11.698 GHz (space-to-Earth), in accordance with the terms, conditions, and technical specifications set forth in its application, this attachment and the Federal Communications Commission's Rules.

2. All conditions of the Order and Authorization DA 04-3163 with the exception of the condition in paragraph 33 otherwise remain in effect.[1]

3. Echostar is afforded thirty days from the date of release of this grant and authorization to decline this authorization as conditioned. Failure to respond within this period will constitute formal acceptance of the authorization as conditioned.

4. This grant is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.115, may be filed within 30 days of the date of the public notice indicating that this action was taken.

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[1] *See In the Matter of EchoStar Satellite LLC Application for Authority to Construct, Launch and Operate a Geostationary Satellite Using the Extended Ku-band Frequencies in theFixed-Satellite Service at the 109° W.L. Orbital Location*, Order and Authorization, DA 04-3163(rel. Sept. 30, 2004), ¶ 33 (requiring EchoStar to "submit to the Commission a modification to this authorization, specifying the exact frequencies for tracking, telemetry and command (TT&C) functions for EchoStar-109W satellite, on, or prior to, the date of its first construction milestone, *i.e.* 9/30/05.").

9–16. Name of Contact Representative

Name:	Pantelis Michalopoulos	**Phone Number:**	202–429–6494
Company:	Steptoe & Johnson LLP	**Fax Number:**	202–429–3902
Street:	1330 Connecticut Ave., N.W.	**E–Mail:**	pmichalo@steptoe.com
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20036–1795
Attention:		**Relationship:**	Legal Counsel

CLASSIFICATION OF FILING

17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b.

- ○ a1. Earth Station
- ◉ a2. Space Station

(N/A) b1. Application for License of New Station
(N/A) b2. Application for Registration of New Domestic Receive–Only Station
- ○ (N/A) b3. Amendment to a Pending Application
- ◉ (N/A) b4. Modification of License or Registration

b5. Assignment of License or Registration
b6. Transfer of Control of License or Registration
- ○ (N/A) b7. Notification of Minor Modification

(N/A) b8. Application for License of New Receive–Only Station Using Non–U.S. Licensed Satellite
(N/A) b9. Letter of Intent to Use Non–U.S. Licensed Satellite to Provide Service in the United States
- ○ (N/A) b10. Other (Please specify)

17c. Is a fee submitted with this application?

◉ If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R.Section 1.1114).

○ Governmental Entity ○ Noncommercial educational licensee

○ Other(please explain):

17d.

Fee Classification BFY – Space Station Modification(Geostationary)

18. If this filing is in reference to an existing station, enter:	19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number:
(a) Call sign of station: S2607	(a) Date pending application was filed: (b) File number: SATLOA2003121100350

TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:

- [x] a. Fixed Satellite
- [ ] b. Mobile Satellite
- [ ] c. Radiodetermination Satellite
- [ ] d. Earth Exploration Satellite
- [x] e. Direct to Home Fixed Satellite
- [ ] f. Digital Audio Radio Service
- [ ] g. Other (please specify)

21. STATUS: Choose the button next to the applicable status. Choose only one.

○ Common Carrier ◉ Non−Common Carrier

22. If earth station applicant, check all that apply.

- [ ] Using U.S. licensed satellites
- [ ] Using Non−U.S. licensed satellites

23. If applicant is providng INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:

○ Connected to a Public Switched Network ○ Not connected to a Public Switched Network ◉ N/A

24. FREQUENCY BAND(S): Place an 'X' in the box(es) next to all applicable frequency band(s).

- [ ] a. C−Band (4/6 GHz)
- [ ] b. Ku−Band (12/14 GHz)
- [x] c.Other (Please specify upper and lower frequencies in MHz.)

Frequency Lower: 10950 Frequency Upper: 14000 (Please specify additional frequencies in an attachment)

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.

- ○ a. Fixed Earth Station
- ○ b. Temporary–Fixed Earth Station
- ○ c. 12/14 GHz VSAT Network
- ○ d. Mobile Earth Station
- ◉ e. Geostationary Space Station
- ○ f. Non–Geostationary Space Station
- ○ g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY:

○ Transmit/Receive ○ Transmit–Only ○ Receive–Only ◉ N/A

"For Space Station applications, select N/A."

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)

- [x] a — authorization to add new emission designator and related service
- [x] b — authorization to change emission designator and related service
- [ ] c — authorization to increase EIRP and EIRP density
- [ ] d — authorization to replace antenna
- [ ] e — authorization to add antenna
- [ ] f — authorization to relocate fixed station
- [ ] g — authorization to change frequency(ies)
- [x] h — authorization to add frequency
- [ ] i — authorization to add Points of Communication (satellites & countries)
- [ ] j — authorization to change Points of Communication (satellites & countries)
- [ ] k — authorization for facilities for which environmental assessment and radiation hazard reporting is required
- [ ] l — authorization to change orbit location
- [ ] m — authorization to perform fleet management
- [ ] n — authorization to extend milestones
- [x] o — Other (Please specify)

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments.	○ Yes ◉ No

ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30–34.

29. Is the applicant a foreign government or the representative of any foreign government?	○ Yes ◉ No
30. Is the applicant an alien or the representative of an alien?	○ Yes ◉ No ○ N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	○ Yes ◉ No ○ N/A
32. Is the applicant a corporation of which more than one–fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	○ Yes ◉ No ○ N/A

33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one−fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	○ Yes ◉ No ○ N/A
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.	

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules? If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.	○ Yes ◉ No
36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explination of circumstances.	◉ Yes ○ No Response to Q36

37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explination of circumstances.	○ Yes ◉ No
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attemptiing unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition?If Yes, attach as an exhibit, an explanation of circumstances	○ Yes ◉ No
39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhinit, an explanation of the circumstances.	○ Yes ◉ No
40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.	Response to Q40

41. By checking Yes, the undersigned certifies, that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti–Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.	◉ Yes ○ No
42a. Does the applicant intend to use a non–U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43.	○ Yes ◉ No
42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?	

43. Description. (Summarize the nature of the application and the services to be provided). (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

See attached narrative, technical annex and Schedule S.

Narrative/Tech Annex

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

- ○ Individual
- ○ Unincorporated Association
- ○ Partnership
- ◉ Corporation
- ○ Governmental Entity
- ○ Other (please specify)

45. Name of Person Signing	46. Title of Person Signing
David K. Moskowitz	Executive Vice President and General Counsel

—>

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT
(U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION
(U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD–PERM, Paperwork Reduction Project (3060–0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to jboley@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

Remember – You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060–0678.

THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104–13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

FCC 312 Schedule S	FEDERAL COMMUNICATIONS COMMISSION SATELLITE SPACE STATION AUTHORIZATIONS (Technical and Operational Description)	Page 1: General, Frequency Bands, and GSO Orbit

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: ECHOSTAR-109W		e. Estimated Date of Placement into Service:	i Will the space station(s) operate on a Common Carrier Basis: N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s): Years	j. Number of transponders offered on a common carrier basis:
c. Construction Completion Date:		g. Total Number of Transponders:	k. Total Common Carrier Transponder Bandwidth: MHz
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) MHz	l. Orbit Type: Mark all boxes that apply: [X] GSO [ ] NGSO

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands in which this station will oper
Also indicate the nature of service(s) for each frequency band.

Frequency Band Limits				e. T/R Mode	f. Nature of Service(s): List all that apply to this band
Lower Frequency (_Hz)		Upper Frequency (_Hz)			
a. Numeric	b. Unit (K/M/G)	c. Numeric	d. Unit (K/M/G)		
13751.5	M	13752.5	M	R	Fixed Satellite Service
13997.5	M	13998.5	M	R	Fixed Satellite Service
11451.5	M	11452.5	M	T	Fixed Satellite Service
11697.5	M	11698.5	M	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 109 W	b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:
Longitudinal Tolerance or E/W Station-Keeping: d. Toward West: 0.05 Degrees e. Toward East: 0.05 Degrees	f. Inclination Excursion or N/S Station-Keeping Tolerance: 0.05 Degrees	Range of orbital are in which adequate service can be provided (Optional): Degrees E/W g. Westernmost: h. Easternmost:	
i. Reason for service are selection (Optional):			

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

S4b. Total Number of Orbital Planes in Network or System:

S4c. Celestial Reference Body (Earth, Sun, Moon, etc.):

S4d. Orbit Epoch Date:

For each Orbital Plane Provide:

(e) Orbital Plane No.	(f) No. of Satellites in Plane	(g) Inclination Angle (degrees)	(h) Orbital Period (Seconds)	(i) Apogee (km)	(j) Perigee (km)	(k) Right Ascension of the Ascending Node (Deg.)	(l) Argument of Perigee (Degrees)	Active Service Arc Range (Degrees)		
								(m) Begin Angle	(n) End Angle	(o) Other

S5. INITIAL SATELLITE PHASE ANGLE For each satellite in each orbital plane, provide the intital phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)

NO NGSO DATA FILED

S6. SERVICE AREA CHARACTERISTICS for each service area provide:

(a) Service Area ID	(b) Type of Associated Station (Earth or Space)	(c) Service Area Diagram File Name (GXT File)	(d) Service Area Description. Provide list of geographic areas (state postal codes or ITU 3-ltr codes), satellites or Figure No. of Service Area Diagram.
SA1	S		Visible Earth
SA2	S		CONUS

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

(a) Beam ID	(b) T/R Mode	Isotropic Antenna Gain		(e) Pointing Error (Degrees)	(f) Rotational Error (Degrees)	(g) Min. Cross-Polar Isolation (dB)	(h) Polarization Switchable? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive				
		(c) Peak (dBi)	(d) Edge (dBi)							(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noice Temp (k)	(o) G/T Max. Gain Pt. (db/K)	(p) Min. Saturation Flux Density (dBW/m2)	Input Attenuator (dB)	
																(q) Max. Value	(r) Step Size
COM	T	33.5	27.5	0.15		30	N		SA2	6	0.028	18					
OMN	R	2.5	-0.5			30	N		SA1					-27.5	-80		
OMN	T	2.5	-0.5			30	N		SA1	3	1.1	3					

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S8. ANTENNA BEAM DIAGRAMS For each beam pattern provide the reference to the graphic image and numerical data:
Also provide the power flux density levels in each beam that result from the emission with the highest power flux density.

(a) Beam ID	(b) T/R Mode	(c) Co-or Cross Polar Mode ("C" or" X")	(d) GSO Ref. Orbital Longitude (Deg. E/W)	(e) NGSO Antenna Gain Contour Description (Figure/Table/ Exhibit)	(f) GSO Antenna Gain Contour Data (GXT File)	Max. Power Flux Density (dBW/M2/Hz) At Angle of Arrival above horizontal (for emission with highest PFD)				
						(g) 5 Deg	(h) 10 Deg	(i) 15 Deg	(j) 20 Deg	(k) 25 Deg
COM	T	C	-109		COM.gxt	-151	-151	-151	-151	-151

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S9. SPACE STATION CHANNELS For each frequency channel provide:

(a) Channel No.	(B) Assigned Bandwidth (kHz)	(c) T/R Mode	(d) Center Frequency (MHz)	(e) Polarization (H, V, L, R)	(f) TTC or Comm Channel (T or C)
C1	1000	R	13752	L	T
C2	1000	R	13998	L	T
TMO1	1000	T	11452	R	T
TMO2	1000	T	11698	R	T
TMC1	1000	T	11452	H	T
TMC2	1000	T	11698	V	T

S10. SPACE STATION TRANSPONDERS For each transponder provide:

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
C001		C1	OMNU		
C002		C2	OMNU		
T001A				TMO1	OMND
T002A				TMO2	OMND
T001B				TMC1	COM
T002B				TMC2	COM

S11. DIGITAL MODULATION PARAMETERS For each digital emission provide:

(a) Digital Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) No. of Phases	(e)Uncoded Data Rate (kbps)	(f) FEC Error Correction Coding Rate	(g) CDMA Processing Gain (dB)	(h) Total C/N Performance Objective (dB)	(i) Single Entry C/I Objective (dB)

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(a) Analog Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) Signal Type	(e) Channels per Carrier	Multi-channel Telephony				(j) Video Standard NTSC, PAL, etc.	(k) Video Noise-Weighting (dB)	(l) Video and SCPC/FM Modulation Index	(m) SCPC/FM Compander, Preemphasis, and Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/I Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						
CMD1	1M00F2D	1000		1									10	22.2
TLM1	1M00G2D	1000		1									9	21.2
TLM2	1M00G2D	1000		1									9	21.2

FEDERAL COMMUNICATIONS COMMISSION **Page 9: Typical Emissions**
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range		Modulation ID		(e) Carriers per Transponder	(f) Carrier Spacing (kHz)	(g)Noise Budget Reference (Table No.)	(h) Energy Dispersal Bandwidth (kHz)	Receive Band (Assoc. Transmit Stn)			Transmit Band (This Space Station)			
								(i)Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW)		EIRP (dBW)		(n) Max. Power Flux Density (dBW/m2/Hz)	(o)Assoc. Stn Rec. G/T (dB/K)
(a) Start	(b) End	(c) Digital (Table S11)	(d) Analog (Table S12)						(j) Min.	(k) Max.	(l) Min.	(m) Max.		
C001	C002		CMD1	1		LB1.doc		63.9	19	39.4				-30.5
T001A	T002A		TLM1	1		LB2.doc					0	3	-170	48
T001B	T002B		TLM2	1		LB3.doc					12	18	-151	37

S14. Is the space station(s) controlled and monitored remotely? If Yes, provide the location and telephone number of the TT and C control point(s): Yes

Remote Control (TT C) Location(s):

S14a: Street Address: 530 Echostar Drive			
S14b. City: Cheyenne	S14c. County: Laramie	S14d. State/Country WY	S14e. Zip Code:
S14f. Telephone Number:	S14g. Call Sign of Control Station (if appropriate):		

Remote Control (TT C) Location(s):

S14a: Street Address: 801 North American Sky Boulavard			
S14b. City: Gibert	S14c. County: Maricopa	S14d. State/Country AZ	S14e. Zip Code:
S14f. Telephone Number:	S14g. Call Sign of Control Station (if appropriate):		

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?:	X	YES		NO		N/A
b. Are the appropriate service area coverage requirements of § 25.143(b)(ii) and (iii), or § 25.145(c)(1) and (2) met?		YES		NO	X	N/A
c. Are the frequency tolerances of § 25.202(e) and the out-of-band emission limits of § 25.202(f)(1), (2) and (3) met?	X	YES		NO		N/A
In addition to the information required in this Form, the space station applicant is required to provide all the information specified in Section 25.114 of the Commission's rules, 47 C.F.R § 25.114.						

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

Application of		
ECHOSTAR SATELLITE OPERATING CORPORATION	Call Sign	S2607
	File No.	SAT-LOA-20031211-00350
For Modification of License To Select TT&C Frequencies For Its Extended Ku-band GSO Satellite at 109° W.L.		SAT-MOD-20050930-_____

APPLICATION FOR MODIFICATION

EchoStar Satellite Operating Corporation ("EchoStar") hereby applies to the Commission for authority to modify its authorization to operate a geostationary extended Ku-band satellite at 109° W.L. in order to specify exact tracking, telemetry and command ("TT&C") frequencies as required by that authorization.[1]

For TT&C operations, EchoStar specifies the following TT&C frequencies for its authorized extended Ku-band satellite at 109° W.L.:

- 13,752.0 MHz and 13,998.0 MHz (using Left Hand Circular Polarization) as the command frequency, and
- 11,452.0 MHz and 11,698.0 MHz (both using Right Hand Circular Polarization when operating through the omnidirectional antenna for transfer

[1] *See In the Matter of EchoStar Satellite LLC Application for Authority to Construct, Launch and Operate a Geostationary Satellite Using the Extended Ku-band Frequencies in the Fixed-Satellite Service at the 109° W.L. Orbital Location*, Order and Authorization, DA 04-3163 (rel. Sept. 30, 2004), ¶ 33 (requiring EchoStar to "submit to the Commission a modification to this authorization, specifying the exact frequencies for tracking, telemetry and command (TT&C) functions for EchoStar-109W satellite, on, or prior to, the date of its first construction milestone, *i.e.* 9/30/05.").

orbit and emergency operations, and in Horizontal and Vertical Linear polarizations, respectively, when operating through the communications antenna for on-station operations) as the telemetry frequencies.

These TT&C frequencies are on the edges of the authorized extended Ku-band, as required by Section 25.202(g) of the Rules.[2] EchoStar also supplies the emission designators and allocated bandwidth, as well as typical link budgets, for these TT&C frequencies in Exhibit 1 and accompanying Schedule S to this Application.

EchoStar respectfully requests that this modification application to specify the TT&C frequencies of its licensed extended Ku-band satellite at 109° W.L. be expeditiously granted and that the condition of its authorization be removed.

Respectfully submitted,

EchoStar Satellite Operating Corporation

/s/

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[2] *See* 47 C.F.R. § 25.202(g).

Exhibit 1

TECHNICAL ANNEX

TT&C CHARACTERISTICS OF THE ECHOSTAR-109W SATELLITE

1. GENERAL DESCRIPTION

The TT&C sub-system provides for communications during pre-launch, transfer orbit and on-station operations. The TT&C sub-system will operate at the edges of the Extended Ku-band frequency ranges during all phases of the mission. All transmissions will operate in a circular polarization mode. A summary of the TT&C subsystem performance is given in Table 1-1.

Table 1-1: TT&C Performance Characteristics

Command Modulation	PCM/PSK/FM
Command/Ranging Frequencies	13,752.0 MHz 13,998.0 MHz
Uplink Flux Density	Between -80 and -60 dBW/m^2
Uplink Satellite Antenna Type	Omni
Uplink Polarization	LHCP
Peak Deviation (Command/Ranging)	± 400 kHz
Telemetry/Ranging Frequencies	11,452.0 MHz (HP in comms antenna) 11,698.0 MHz (VP in comms antenna)
Downlink Satellite Antenna Type	Comms (on-station) Omni (transfer orbit and emergencies)
Downlink Polarization	RHCP (omni antenna) Linear Polarization (comms antenna)
Maximum Downlink EIRP	3 dBW (omni antenna) 18 dBW (comms antenna)
Telemetry/Ranging Modulation Index: 1 sub-carrier 2 sub-carriers 3 sub-carriers	 1.0 0.7 0.6

2. EMISSION DESIGNATORS AND ALLOCATED BANDWIDTH

The emission designators and allocated bandwidths for both the telecommand and telemetry emissions are as follows:

Telecommand: 1M00F2D (1.0 MHz)

Telemetry: 1M00G2D (1.0 MHz)

3. LINK BUDGETS

Tables 3-1 and 3-2 provide representative command and telemetry link budgets for transfer orbit/emergency operations and on-station operations.

Table 3-1: Command Link Budgets

Command Link Budget			
Link Parameters		**High U/L**	**Low U/L**
Frequency	(MHz)	13,998	13,998
Incident Flux Density	(dBW/m2)	-60.0	-80.0
Aperture Factor	(dB-m2)	-44.4	-44.4
Incident Isotropic Power	(dBW)	-104.4	-124.4
Antenna Gain	(dBi)	-0.5	-0.5
Noise Temperature	(dB-K)	30.0	30.0
Total Receive Losses	(dB)	12.0	12.0
Satellite G/T	(dB/K)	-30.5	-30.5
Receiver Input Power	(dBm)	-86.9	-106.9
Receiver Threshold	(dBm)	-112.0	-112.0
Spacecraft Margin	(dB)	25.1	5.1

Table 3-2: Telemetry Link Budgets

Telemetry Link Budget			
Link Parameters		**Omni**	**Comms**
Frequency	(MHz)	11,698	11,698
Transmit Power	(dBW)	3.5	-9.5
Line Losses	(dB)	3.0	6.0
Antenna Gain (minimum)	(dBi)	-0.5	27.5
EIRP (minimum)	(dBW)	0.0	12.0
Free Space Path Loss	(dB)	206.1	205.6
Rx E/S G/T	(dB/K)	48.0	37.0
Downlink C/N	(dB)	10.5	12.0
C/N Required	(dB)	9.0	9.0
Margin	(dB)	1.5	3.0

CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING ENGINEERING INFORMATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this pleading, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this pleading, and that it is complete and accurate to the best of my knowledge and belief.

/s/

Richard Barnett, Ph.D., B.Sc.
Telecomm Strategies Inc.
6404 Highland Drive
Chevy Chase, Maryland 20815
(301) 656-8969

Response to Question 36

In a Memorandum Opinion and Order released May 16, 2002, the Satellite Division of the International Bureau cancelled two conditional construction permits held by EchoStar affiliates for 22 channels at the 175° W.L. orbital location. *See In the Matter of EchoStar Satellite Corporation, Directsat Corporation, Direct Broadcasting Satellite Corporation, Consolidated Request for Additional Time to Commence Operation*, Memorandum Opinion and Order, DA 02-1164 (rel. May 16, 2002).

By Order released July 1, 2002, the International Bureau cancelled EchoStar's license for a Ka-band satellite system and dismissed a related modification application filed by EchoStar. *See In the Matter of EchoStar Satellite Corporation; Application for Authority to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed-Satellite Service*, Memorandum Opinion and Order, DA 02-1534 (rel. July 1, 2002). On November 8, 2002, the International Bureau reinstated EchoStar's license for a Ka-band system as well as the related modification application. *See In the Matter of EchoStar Satellite Corporation; Application for Authority to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed-Satellite Service,* Memorandum Opinion and Order, DA 02-3085 (rel. Nov. 8, 2002).

In a Memorandum Opinion and Order released April 29, 2004, the International Bureau denied, in part, four applications filed by EchoStar to operate GSO FSS satellites using the Ka and/or Extended Ku-bands at the 83° W.L., 105° W.L, 113° W.L, and 121° W.L orbital locations. *See In the Matter of EchoStar Satellite LLC, Applications for Authority to Construct, Launch, and Operate Geostationary Satellites in the Fixed-Satellite Service Using the Ka and/or Extended Ku Bands at the 83° W.L., 105° W.L, 113° W.L, and 121° W.L orbital locations*, Memorandum Opinion and Order, DA 04-1167 (rel. Apr. 29, 2004). EchoStar has petitioned for reconsideration of this decision.

In a Memorandum Opinion and Order released August 3, 2004, the International Bureau declared null and void the space station authorization held by VisionStar, an EchoStar affiliate, for use of the Ka-band at the 113° W.L. orbital location. *See VisionStar, Inc., Application for Modification of Authority to Construct, Launch and Operate a Ka-Band Satellite System in the Fixed Satellite Service*, Memorandum Opinion and Order, DA 04-2449 (rel. Aug. 3, 2004).

By letter dated May 19, 2005, the International Bureau denied EchoStar's applications for a Fleet Management Modification and for a Special Temporary Authority to move the EchoStar 4 satellite to 61.5° W.L., pending the Commission's consideration of another EchoStar request to move the satellite to 77° W.L., on the grounds that the purpose of the proposed fleet management modification was not consistent with the purposes of the Commission's rules and that there were no extraordinary circumstances for the grant of temporary authority. *See* Letter from Thomas S. Tycz, Chief, Satellite Division, International Bureau, FCC to Pantelis Michalopoulos, Counsel to EchoStar Satellite L.L.C., DA 05-1405 (May 19, 2005).

In a Memorandum Opinion and Order released June 3, 2005, the International Bureau denied EchoStar's application for a Special Temporary Authority to move the EchoStar 4 satellite to 77° W.L. on the grounds that EchoStar had failed to establish extraordinary circumstances for the grant of such authority. *See EchoStar Satellite L.L.C., Application for Special Temporary Authority to Conduct Telemetry, Tracking and Command Operations During the Relocation of EchoStar 4 to the 77° W.L. Orbital Location*, Memorandum Opinion and Order, DA 05-1581 (rel. Jun. 3, 2005). EchoStar has petitioned for reconsideration of this decision.

RESPONSE TO QUESTION 40

OWNERSHIP AND CORPORATE OFFICERS AND DIRECTORS

OWNERSHIP

EchoStar Satellite Operating Corporation is an indirect, wholly-owned subsidiary of EchoStar Communications Corporation (a Nevada corporation). The stockholders owning of record and/or voting 10 percent or more of the voting stock of EchoStar Communications Corporation include:

Ownership Interest	Citizenship	Approx. Equity Interest[1]
Charles W. Ergen[2] Chairman and CEO EchoStar Communications Corporation 9601 South Meridian Blvd. Englewood, CO 80112	USA	53%
Fidelity Management and Research Corporation 82 Devonshire Street Boston, MA 02109	USA (Massachusetts corporation)	15%

[1] As of March 8, 2005. Mr. Ergen and Fidelity Management and Research Corporation have an approximately 92% and 1% voting interest, respectively, in EchoStar Communications Corporation.

[2] Includes both Class A common and Class B common stock ownership. Class B common stock is owned through a family trust.

CORPORATE OFFICERS AND DIRECTORS[3]

EchoStar Communications Corporation

Executive Officers:

Charles W. Ergen	Chief Executive Officer
James DeFranco	Executive Vice President
Carl E. Vogel	Vice Chairman
Michael A. Neuman	President and Chief Operating Officer
David K. Moskowitz	Executive Vice President, General Counsel and Secretary
Steven B. Schaver	President, EchoStar International Corporation
David J. Rayner	Executive Vice President and Chief Financial Officer
Mark W. Jackson	President, EchoStar Technologies Corporation
Michael Schwimmer	Executive Vice President, Programming and Marketing
O. Nolan Daines	Executive Vice President, Information Technology and Broadband
Michael Kelly	Executive Vice President, DISH Network Service L.L.C. and Customer Service Operations

Board of Directors:

Charles W. Ergen	Chairman
Carl Vogel	Vice Chairman
Steven R. Goodbarn	
James DeFranco	
David K. Moskowitz	
Cantey M. Ergen	
Raymond L. Friedlob	
C. Michael Schroeder	
Michael T. Dugan	
Tom A. Ortolf	

EchoStar Satellite Operating Corporation

Executive Officers:

Charles W. Ergen	President and Chief Executive Officer
James DeFranco	Executive Vice President
David K. Moskowitz	Executive Vice President, General Counsel, Corporate Secretary
Kyle J. Kiser	Treasurer
Stanton Dodge	Assistant Corporate Secretary

[3] The address for all officers and directors of EchoStar Communications Corporation and EchoStar Satellite Operating Corporation is 9601 South Meridian Blvd., Englewood, CO 80112.

Board of Directors:
Charles W. Ergen Chairman
James DeFranco
David K. Moskowitz

Command Link Budget

Link Parameters		High U/L	Low U/L
Frequency	(MHz)	13,998	13,998
Incident Flux Density	(dBW/m2)	-60.0	-80.0
Aperture Factor	(dB-m2)	-44.4	-44.4
Incident Isotropic Power	(dBW)	-104.4	-124.4
Antenna Gain	(dBi)	-0.5	-0.5
Noise Temperature	(dB-K)	30.0	30.0
Total Receive Losses	(dB)	12.0	12.0
Satellite G/T	(dB/K)	-30.5	-30.5
Receiver Input Power	(dBm)	-86.9	-106.9
Receiver Threshold	(dBm)	-112.0	-112.0
Spacecraft Margin	(dB)	25.1	5.1

Telemetry Link Budget

Link Parameters		Omni
Frequency	(MHz)	11,698
Transmit Power	(dBW)	3.5
Line Losses	(dB)	3.0
Antenna Gain (minimum)	(dBi)	-0.5
EIRP (minimum)	(dBW)	0.0
Free Space Path Loss	(dB)	206.1
Rx E/S G/T	(dB/K)	48.0
Downlink C/N	(dB)	10.5
C/N Required	(dB)	9.0
Margin	(dB)	1.5

Telemetry Link Budget

Link Parameters		Comms
Frequency	(MHz)	11,698
Transmit Power	(dBW)	-9.5
Line Losses	(dB)	6.0
Antenna Gain (minimum)	(dBi)	27.5
EIRP (minimum)	(dBW)	12.0
Free Space Path Loss	(dB)	205.6
Rx E/S G/T	(dB/K)	37.0
Downlink C/N	(dB)	12.0
C/N Required	(dB)	9.0
Margin	(dB)	3.0